

FIRE ESCAPE LADDER

CLAIMS

5 1. A fire escape ladder assembly comprising:

an enclosure that is mountable in the wall of a building below a sill of an access window in the building, the enclosure having an open interior positioned between spaced sidewalls, the sidewalls being spaced apart such that the enclosure fits between spaced vertical wall support members of the building structure, the enclosure further comprising front that is openable to provide
10 access to the open interior of the enclosure;

a lateral support rod that is wider than the enclosure, the rod extending through the interior of the enclosure and protruding outwardly through openings in outer sides of the sidewalls of the enclosure, the support rod being long enough that it will extend through openings in the wall support members on opposite sides of the openings in the enclosure sidewalls; and

15 a folding ladder mounted at an upper end thereof to the support rod, the ladder being collapsible so as to fit in the open interior of the enclosure when not in use, the ladder being removable from the enclosure so it can extend through the access window and hang downwardly on the outside of the building for emergency exit from the building, the ladder being securely supported by the building support members by the lateral support rod.

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2. A fire escape ladder assembly as in claim 1 wherein the support rod is axially movable in the openings such that the support rod can be inserted in the building wall support members by first extending the rod through one the openings in side of the enclosure and structural

member and then extending the rod through the openings on the other side of the enclosure and structural member so that the rod is positioned in the openings on both sides of the enclosure, said movement occurring at least in part with the enclosure in place in the building wall.

5 3. A fire escape ladder assembly as in claim 2 and further including a releasable lock that holds the support rod in a predetermined axial position in the enclosure, wherein the rod is held in supporting engagement with building supports at both ends of the rod.

10 4. A fire escape ladder assembly as in claim 3 wherein the lock is axially movable from a first position, wherein the rod can be inserted into both building supports, to a second position wherein the rod is locked in position in the enclosure, with the rod positioned in engagement with both building supports.

15 5. A fire escape ladder assembly as in claim 3 wherein the lock includes a pair of threaded nuts mounted on threaded portions of the support rod.

20 6. A fire escape ladder assembly as in claim 1 wherein the enclosure is L-shaped and has a lower portion that fits between floor joists and an upper portion that fits between wall studs in a building enclosure, the L-shaped enclosure providing increased ladder storage capacity for a building structure with window sills that are too close to the floor to provide adequate ladder storage capacity in the building wall.

7. A fire escape ladder assembly as in claim 1 wherein the ladder comprises lateral rungs spaced longitudinally on a pair of spaced chain support members, the rungs being suspended on hooks in the interior of the enclosure when the ladder is stored in the open interior of the enclosure.

8. A fire escape ladder as in claim 1 wherein the front of the enclosure is covered by a cover panel that is releasibly mounted on the enclosure.

9. A fire escape ladder as in claim 7 wherein the cover panel is attached to the enclosure by a hook and loop fastener. 10. A fire escape ladder assembly for insertion between spaced building frame studs in an interior opening in a building wall below a window opening, the ladder assembly comprising:

an enclosure that fits between the spaced studs, the enclosure having sides positioned adjacent each of the spaced studs, the enclosure being provided with opposed side openings that align with opposed openings provided in the spaced studs;

the enclosure having an open interior and an openable front access to the open interior;

a support rod that fits through the enclosure openings and stud openings and is long enough to extend through the enclosure and both stud openings simultaneously for supporting engagement in the openings in the opposed studs, the support rod being axially movable in the enclosure for mounting the enclosure and rod in the wall;

axial securing means for securing the axial position of the support rod in the studs, such that the ends of the rod remain in mating engagement in the openings in the studs; and

a collapsible ladder supportingly mounted at an upper end to the support rod, the ladder being collapsible into the open interior of the enclosure.

11. A fire escape ladder according to claim 10 wherein the support rod is at least
5 partially threaded and the axial securing means comprise threaded nuts that thread on the support rod and are axially movable on the support rod to a position adjacent the studs, so as to restrain the support rod from axial movement out of engagement with the studs.

12. A fire escape ladder as in claim 10 wherein the openable front of the enclosure is
10 covered by a removable door.

13. A fire escape ladder as in claim 10 wherein the enclosure is L-shaped, with a vertical portion fitting in the building wall and a horizontal portion fitting in a floor of a building, the L-shaped enclosure providing room in the interior of the enclosure in situations where the window sill
15 is too low to provide enough room for the ladder in the wall alone.

14. A fire escape ladder as in claim 10 wherein the ladder includes a pair of elongated, flexible vertical supports having spaced rungs extending therebetween and with standoffs being spaced along the supports.

20 15. A fire escape ladder as in claim 14 wherein the vertical supports comprise linked chain.

16. In a building having a building opening between spaced vertical wall studs positioned below a window opening, the improvement comprising a fire escape ladder assembly including:

an elongated support rod that is longer than the spacing between the studs, such that
5 the rod slidingly fits through opposed openings in the studs and is supported by the studs;

fasteners engaging the rod and holding the rod in a supported axial position in the stud openings;

a foldable ladder comprising a collapsible elongated support member with foot supports spaced therealong, the support member being attached to the support rod at an inner end of
10 the support member, the ladder being collapsible and stowable in the building opening when not in use.

17. A method for installing a collapsible fire escape ladder in a wall opening between spaced building frame studs comprising:

forming opposed openings in the spaced studs;

15 mounting a support rod in the building frame by inserting one end of the rod through one stud opening and then inserting an opposite end of the rod through the opening in the other stud, the rod being long enough that the ends of the rod can extend through both studs at the same time;

mounting a supported end of a collapsible fire escape ladder on the support rod before or after mounting the support rod in the building;

20 securing the axial position of the support rod in the studs so as to prevent either end of the support rod from axial movement away from supporting engagement in the openings in the studs;

stowing the ladder in collapsed form in the wall openings and covering the wall openings with a removable cover.